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ABSTRACT

Because current research offers little conclusive evidence that explicit metacognitive knowledge is necessary for effective reading, a study was designed to determine (1) if comprehension could be enhanced by activating subjects' awareness of appropriate strategies, and (2) which strategies, based on subjects' spontaneous reports, were most effective. Fifty-nine subjects were assigned to either an activation or a control group. Prior to reading the selected passage, the activation subjects completed a questionnaire designed to stimulate their awareness of the cognitive or metacognitive strategies they frequently used. After reading the text, all students were tested on comprehension and recall. Results indicated that awareness of previously acquired strategies did not in itself improve comprehension or recall. These findings might have been influenced, however, by the time limit on the metacognitive questionnaire, the unfamiliarity of its questions, and the lack of sufficient time to consider the questionnaire's implications before beginning the reading. (HM)

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Readins to understand and remember: the role of metacosnitive awareness about strategies

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RUNNING HEAD: Metacosnitive awareness

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Increasing attention is currently being paid to metacognitive skills of reading and their relationship to effective reading (Brown, 1981). These metacognitive skills are usually considered to involve two main components: what readers explicitly know about the task of reading and how readers regulate and monitor ongoing processes during reading. Although these two components of metacognition are said to be closely related, each supporting the other recursively (Brown and Palincsar, 1982; Lefebvre-Pinard and Pinard, in press), most of the research dealing with the importance of metacognition in reading (Baker, 1979; Baker and Brown, in press b; Brown and Smiley, 1977, 1978; Paris and Myers, 1981) have mainly focused on the second, self-regulatory component of metacognitive skills, especially those skills concerned with comprehension monitoring. These studies have already provided preliminary information on the type of strategies used by children and adults in their ongoing attempts to understand and remember prose materials while reading. However, they do not inform us if individuals need to be explicitly aware of their available strategic repertoire for efficient control of such strategies. In fact, there exist few studies that have systematically investigated the relationship between explicit metacognitive knowledge and effective reading. There is thus little information about what type of knowledge about reading the individual needs to bring to bear on the task in order to perform efficiently in different reading situations.

The notion that what one knows should be related to how one behaves is currently receiving a good deal of renewed attention

in the cognitive psychology literature (Cavanaugh and Perlmutter, 1982) and many authors now argue that metacognitive awareness is crucial for efficient cognitive performance in general (Borkowski, in press) and efficient reading in particular (Brown, 1982). A number of researchers interested in the metacognitive aspects of reading (e.g. Baker and Brown, in press a) have thus assumed that the more explicit and detailed knowledge individuals come to develop about the utility of various strategies (involved in reading prose materials, for instance), the more they will be able to understand and remember such materials. According to these authors, if the reader can be made aware of the basic strategies needed for reading and remembering, she cannot help but become a more effective reader.

This assumption however still needs to be supported by more solid experimental evidence, not only with respect to children's reading abilities, but also as it relates to mature readers. Certainly, questionnaire and interview studies about hypothetical reading tasks and past personal experiences have shown that both young children compared to older children (Myers and Paris, 1978) and disabled adult readers compared to good adult readers (Gambrell and Heathington, 1981) seem to be less aware of the existence and utility of various strategies for regulating comprehension during reading. Similarly introspective reports collected from proficient adult readers while they were trying to process texts (Collins, Brown and Larkin, 1980) have provided evidence that mature readers do possess some awareness of their reading processes. But, because these studies have measured explicit

knowledge about reading without relating it directly to reading performance, they do not permit us to determine whether this metacognitive awareness is a crucial factor in the effective performance of good readers.

There exist a few empirical studies which have specifically addressed this issue. Paris and Myers (1981) asked good and poor fourth grade readers to rate the usefulness of 20 reading strategies on a nine point scale. Results revealed that poor readers were less aware of the detrimental influences on comprehension of harmful strategies than good readers while their ratings of useful or neutral strategies were not different from good readers' ratings. Subjects were also asked to report any strategies that they had used to study a short story. Even though the study provides no detailed information as to the results obtained concerning such strategies, the authors indicate the existence of a positive relationship between the reported use of at least one strategy and recall performance. Hare and Smith (1982) employed self-report methodologies in two studies of sixth and seventh graders which were designed to investigate the relationship between what subjects say they do in the context of a reading task and their actual reading performance. Self-report via retrospection yielded moderate positive correlations between the number of explicit problem-solving strategies subjects produced over narrative and expository passages and their reading achievement scores, but self-report via protocol analysis did not yield any correlation that was significant in a positive direction. Olshavsky (1976-1977) used a method of analysis of readers' verbal proto-

cols with a group of tenth grade students and identified ten strategies employed by students to comprehend a short story. The results failed to support the hypothesis that readers with good reading proficiency use different types of strategies, but they indicated that good readers may use some of these ten strategies more frequently than poor readers, although the difference was not statistically significant. Finally, Phifer and Glover (1982) investigated the metacognitive reading strategies college students reported having used while reading an expository passage. No significant differences were observed in the reported usage of comprehension and memory strategies between groups of students identified as high and low comprehenders.

Given the diversity of knowledge and performance measures used in these studies, the relationship between the type of knowledge about reading individuals do manifest and their performance remains obscure. These studies thus appear to us to leave open two main problems: First, more information is needed on the conditions under which people can have access to the repertory of knowledge about reading they are in possession of and can bring this knowledge to bear on the task at hand. It may not be sufficient to have knowledge available about effective reading strategies unless one can activate, i.e. call upon when needed, the portions of that knowledge which are relevant for a specific reading task and which will fuel the operation of self-regulatory processes (Lefebvre-Pinard and Pinard, in press). Second, what characteristics, besides sheer amount, of this repertory of knowledge are associated with better performance in comprehending

and remembering? We lack basic information about both the content (it can be more or less complete, or differentiated) and the structure (it can be more or less organized) of this knowledge and about the ways in which such variations can give rise to differences in reading performance.

The current study was designed to be an initial investigation of these two problems. We decided to examine adult readers, with good reading proficiency, in order to provide what might be called an "adult norm" that could serve as a reference point for future developmental studies. Adulthood may be the optimal period to look at readers' metacognitive knowledge and its relationship to reading performance because the gap often observed between what children say they know and how they perform (Brown, 1981) may narrow as subjects reach adulthood (Gambrell and Heathington, 1981). In addition, relationships that are unclear in young or novice readers just beginning to understand the utility of certain reading strategies may become more apparent in individuals with more reading experience.

The specific objectives of the study were two-fold. The first was to determine if simply activating those relevant aspects of metacognitive knowledge that stress the utility of selecting appropriate strategies for studying a text would enhance comprehension and recall performance in mature readers. The activation condition was designed to provoke awareness of existing metacognitive knowledge by means of a questionnaire, given prior to the reading task, that assessed strategies that subjects

knew and intended to use both to progress towards a given reading objective (cognitive strategies) and to monitor that progress (metacognitive strategies). It was assumed that this systematic questioning before a reading task would make the subjects more able to differentiate and organize their existing repertoire and would increase the probability of applying it when they study the text. A second purpose of this study was to specify which content and structure of the metacognitive knowledge evidenced by subjects in the activation condition seem to be associated with better performance on the comprehension and recall task. In examining the strategic repertoire subjects spontaneously report, we were interested in uncovering not only the reading strategies common to most of the proficient adult readers, but also the more specialized and idiosyncratic strategies that certain individuals may have developed in order to meet more demanding criteria of comprehension and recall.

Method

Subjects

Subjects were 59 French-speaking undergraduate students (38 females and 21 males) in psychology who volunteered to participate in the experiment.

Procedure: Subjects were seen in two separate sessions.

In the first session, all subjects were administered a standardized Reading Comprehension Test (Note 1). For each of the 24

questions, subjects chose the sentence that was most consistent with the presented test sentence among a list of alternatives. Results in this initial test were employed to assign subjects either to the activation (n=30) or to the control condition (n=29), with sex, age and test scores equated across groups.

The second session consisted of four parts and took place one week after the Reading Comprehension Test.

1. All subjects were first given one minute to get an overview of the text they would be required to read, in order to insure that they grasped the expository nature and general topic of the text when responding to the metacognitive or general questionnaire given prior to the reading period. Reading material consisted of a 15 paragraph (approximately 1300 words) expository text on man's evolution, a topic with which psychology undergraduates can be assumed to be only moderately familiar.Subjects were also informed that they would have to answer comprehension and recall questions based on the text, after the reading period, and that they would not have access to the text at that time. In addition, subjects were told that they could, if they so wished, underline or take notes on the text they would be required to read.

2. Before reading the text, subjects were given 25 minutes to complete a written questionnaire, the form of which was determined by their experimental condition. They were told that responding to the questionnaire would help them to study the target

text.

For the activation condition, a metacognitive questionnaire was developed where subjects had to report any strategies they knew and intended to use to study the text. In order to insure an effective activation of subjects' strategic knowledge and to get a sufficiently detailed account of their strategies, each of the 12 questions was constructed by combining three main dimensions: cognitive or metacognitive aspects of subjects' strategic knowledge, types of reading objectives and levels of textual organization. A given question thus assessed either cognitive (to progress towards an objective) or metacognitive (to monitor that progress) strategies, involved one of two types of reading objectives (to foster comprehension and recall or to deal with failures to understand) and referred to one of three levels of textual organization (the sentence, the paragraph or the text as a whole). An example of one of these questions is: "What do you intend to do in order to check that you adequately master the content of a given paragraph?". Organizing the metacognitive questionnaire along these three dimensions seemed to provide an effective way to help subjects to become aware of the cognitive or metacognitive strategies they use as a function of varying requirements of different types of reading objectives and different levels of textual organization. In order to facilitate the scoring of protocols, subjects were asked to clearly delineate one strategy from another in their reports.

In the control condition, a general questionnaire composed of four questions was developed where subjects were required to express their opinions concerning theories of man's evolution. An example of one of these questions is: "Why did the theory of evolution have great difficulties being accepted in the XIXth century?". We assumed that responding to such questions would prevent subjects from thinking about the strategies they would use to complete the reading task.

3. All subjects were subsequently given 20 minutes to read and study the text. The text was edited in order to provide ample space to underline or take notes.

4. Following this, and after removal of the text, all subjects were allowed 15 minutes to answer 22 multiple-choice questions (10 of comprehension and 12 of recall) based on the text. Successful performance on recall questions involves only memory of specific facts, while the comprehension questions require making inferences in addition to factual recall. This test of Reading Performance based on the text had been developed and previously standardized by Boucher (1982) on another sample of undergraduate psychology students.

Scoring of protocols

A scoring system was developed in order to code all strategies produced by subjects to the metacognitive questionnaire in the activation condition. Responses to the twelve questions of

the questionnaire were pooled in order to facilitate subsequent statistical analysis. The first version of the coding scheme included 37 different categories. The large number reflected the diversity in content of the strategic repertoire evidenced by subjects. Thirty-one of these categories concerned actions subjects said they would do (e.g. to underline). Many such strategies were used for both cognitive (i.e. to enhance comprehension and recall) and metacognitive (i.e. to monitor comprehension and recall) aims. We thus decided to eliminate the cognitive/metacognitive distinction in our coding scheme. The remaining six categories isolated the specific target object on which a given action may bear (e.g. to summarize underlinings). The distinction between action and target object allowed us to take into account the structure of metacognitive knowledge evidenced by number of subjects. The scoring was done by two of the authors and the intercoder agreement was .87 across the entire range of protocols. Disagreements were subsequently resolved through mutual discussion.

In order to facilitate statistical analysis, we grouped together conceptually similar categories. The final version of the coding scheme included 18 categories and consisted of 13 categories of actions which 9 were characterized as covert and 4 as overt studying actions, and 5 categories which referred to target object on which a given action may bear.

Results

Mean scores on the Initial Comprehension Test and on the Reading Performance Test for the activation and control groups are presented in Table 1. Inspection of Table 1 clearly shows that there is no difference between scores of the two groups on the Initial Comprehension Test. Subjects' scores on the 22 questions of the Reading Performance Test were submitted to three analysis of covariance using results on the Initial Comprehension Test as covariate. These analyses revealed a significant effect of the covariate on the global scores ($F_{1,56}=12.52$, $p<.001$) as well as on separate comprehension ($F_{1,56}=4.56$, $p<.05$) and recall ($F_{1,56}=14.08$, $p<.001$) scores. There were no significant differences between the activation and the control groups on global ($F_{1,56}=1.05$, n.s.) and recall ($F_{1,56}=0.02$, n.s.) scores; on comprehension scores, a marginally significant superiority of the activation group was observed ($F_{1,56}=2.81$, $p<.10$).

Table 2 presents the frequency and the mean emission rate of strategies mentioned in each of the 18 categories by the 30 subjects, and the number of subjects reporting each category of strategies at least once. Table 2 reflects the large diversity in the strategic repertoire evidenced by our sample of adult readers with good reading proficiency. Table 2 also shows that there exist reading strategies which seem to be common to most of the subjects in our sample. For example, Category 3 (to interconnect informations) was mentioned 53 times by 21 subjects, Category 10 (to reread), 115 times by 29 subjects, and Category 16

(main aspects as target object) 62 times by 24 subjects. On the other hand, some strategies seem to be much more specialized and idiosyncratic, being reported by many fewer subjects. For example, Category 5 (to use prior knowledge) is mentioned only 14 times by 8 subjects, Category 13 (to take notes), only 6 times by 5 subjects, and Category 14 (underlinings as target object), only 6 times by 3 subjects. Despite the low frequency of some categories, we nevertheless decided to include these strategies in the analyses, because a large number of them are considered in the literature as crucial strategies for effective reading (Baker and Brown, in press b).

Finally, in order to provide a more complete picture of the diversity of content of the strategic repertoire evidenced by subjects, we computed both the total number of strategies and the total number of different strategies produced by each subject. Range for total number of strategies was extremely large (from 7 to 38, mean=19, S.D.=7.84). Subjects also differed in the number of different strategies they mentioned (from 3 to 13, mean=7.83, S.D.=2.74). This latter indicates large differences between subjects in terms of the amount of metacognitive knowledge about strategies to which they have conscious access.

The relationship between subjects' global scores on the 22 recall and comprehension questions and number of strategies produced by each subject was computed by means of a Pearson product moment correlation. These correlations failed to reach significance for either the total number of strategies produced (r=.12)

or the total number of unique strategies mentioned (r=.10) by each subject. In order to examine the relative contributions of subjects' initial comprehension and the type of strategies they reported, to their global scores on the Reading Performance Test and in particular to determine which subset of actions or objects mentioned by subjects seem to be most associated with higher scores on the reading task, a multiple regression analysis was computed. Order of entry into the equation was determined by the amount of variance in global scores that each variable explained. Table 3 presents multiple regression for predictors of global performance scores (strategies which contributed less than 2% in the increment of R^2 are not included). The total set of variables included in the equation accounted for 76% of the variance in global scores on the Reading Performance Test. The analysis indicated that 10 categories of strategies accounted for a significant proportion of the variance in reading performance (R^2 increment=.57) beyond the variance accounted for by the initial comprehension test (R^2=.19). Of these ten categories, three made the strongest contribution in accounting for 36% of the variation in global performance scores: two categories concerned overt studying strategies (Cat. 13: to take notes and Cat. 12: to underline) and one concerned a covert studying strategy involving self-evaluation. (Cat. 7: self-questioning). The remaining seven categories accounted for an additional 21% of the variation. It is worthy to point out that among the 10 strategies accounting for a significant proportion of the variance in reading performance, four of them concern notes or underlinings.

Discussion

The first objective of the study was to determine if simply activating those aspects of metacognitive knowledge that stress the utility of selecting appropriate strategies for studying a text would enhance comprehension and recall performance in mature readers. Comparison of mean scores on the Reading Performance Test reveals that subjects submitted to the activation condition were not significantly different from those submitted to the control condition. It seems, then, that the mere fact of having to respond to, prior to the reading task, a metacognitive questionnaire designed to provoke awareness of an already acquired strategic repertoire was not sufficient to improve comprehension and recall of the specific reading materials used in the study. However, before concluding that provoking awareness of an acquired strategic repertoire has no effects on reading performance, it would be important to examine in more detail the conditions under which metacognitive knowledge was activated in the present study.

Subjects in the activation condition had a maximum of 25 minutes to answer the twelve questions of the metacognitive questionnaire designed to assess the strategies they knew and intended to use to study the text. In addition, the type of question asked in the questionnaire was rather unfamiliar since these are questions that most people do not frequently ask themselves and that are not usually raised in most teaching programs. Thus, subjects would have probably been in a better position to benefit

from such questioning if they had been given more time to answer. With additional time, subjects would have had a better chance to relate their existing strategic knowledge to the objectives and requirements of the specific reading situation they would have to cope with and to systematically plan the implantation of these strategies for the text-studying period. Moreover, given the lack of familiarity, it is conceivable that any effects due to such an activation of metacognitive knowledge would be more visible in the long than in the short term. In the present study, subjects proceeded to the text-studying period immediately after answering the metacognitive questionnaire. It is quite conceivable that such a short delay did not provide them with the opportunity to properly evaluate the total impact that their newly gained metacognitive awareness about reading strategies might exert on their performance and to reconsider or question their usual studying methods. Anecdotal evidence supports this interpretation: a number of subjects in the activation group have spontaneously reported, a few weeks after the end of the experiment, that the simple fact of having answered the metacognitive questionnaire had led them to become more and more conscious of their usual studying strategies and to more critically evaluate their use of these strategies in their current reading assignments. Future research on the conditions under which existing metacognitive knowledge might be best activated for improved self-regulation and performance should thus take into account both short-term and delayed effects of such activation on the reading performance.

A second objective of this study was to examine the strategic repertoire subjects in the activation condition would spontaneously report, in order to specify which aspects of their metacognitive knowledge seem to be associated with better performance on the comprehension and recall tasks. To reach this objective, it was deemed necessary to develop a new coding system which would provide a more refined and exhaustive description of the repertoire of strategies mentioned by subjects than previous coding systems reported in the literature (e.g. Hare and Smith, 1982; Olshavsky, 1976-1977; Phifer and Glover, 1982). Our coding system reflected the large diversity in content and in organization of the strategic repertoire evidenced by mature readers and highlighted some features of their metacognitive knowledge which were not detected by previous scoring systems. First, in a sample of adults who were all relatively proficient readers, there exist large differences between subjects in terms of the amount of metacognitive knowledge about strategies to which they have conscious access, some of them being explicitly aware of only a small number of different strategies whereas others give evidence of a much more complete and extensive metacognitive knowledge. Second, among the strategies reported by subjects, there are some that seem to be known by most readers of that reading level, whereas others seem to be part of the conscious repertoire of only a minority of subjects. Third, the fact that a majority of subjects (26/30) explicitly specified at least one target object on which a given action may bear indicates that the product of a previously applied action (e.g. underlinings) may be subsequently re-used as target object of another action (e.g.

to summarize underlinings), thus showing a type of "recursive" organization present in a number of adult readers' metacognitive knowledge. Fourth, though most of the strategies mentioned were used for both cognitive and metacognitive aims, our coding system enabled us to show that a majority of subjects (25/30) reported knowing at least one of the three strategies (Cat. 7, 8 or 9) specifically concerned with assessing the level of one's understanding and recall during studying. This seems to indicate that most adult readers, even when they never received specific instruction on metacognitive skills of reading, have available in their repertoire some metacognitive strategies whose specific function is to regulate progress towards the sought-after objective (Lefebvre-Pinard and Pinard, in press).

In sum, by assessing metacognitive knowledge about reading strategies with an extensive questionnaire and by developing a more refined coding scheme of the strategies reported by readers, it was possible to make a first step towards the elaboration of an adequate taxonomy of adults' knowledge about reading strategies. Although we are well aware of the fact that readers do not necessarily employ the strategies they profess to use, we nevertheless believe, with Ericsson and Simon (1980), that these verbal reports deserve to be studied in their own right and that they may be more veridical that certain researches (e.g. Phifer and Glover, 1982) suggest. For instance, it is worthy to note that for the two categories of strategies (Cat. 12: to underline and Cat. 13: to take notes) where it was possible to check whether readers actually applied what they said they would do,

100% of subjects reporting one or the other of these strategies actually did use them.

Concerning the specific question of which content and structure of the metacognitive knowledge seem to be associated with better reading performance, our results should be interpreted with caution. The multiple regression analysis revealed that a subset of actions and target objects mentioned by subjects accounted for a significant proportion of the variance on the Reading Performance Test, beyond the variance accounted for by the Initial Comprehension Test; however, the small number of subjects included in our sample and the relatively low mean emission rate of certain categories of strategies impose severe limits upon the scope and the interpretation of our results.

In order to be able to specify in a more conclusive way the specific aspects of metacognitive knowledge that differentiate effective from less effective readers, future research in this domain should thus be conducted with much larger samples of subjects. In addition, three main types of methodological improvements to this type of study might contribute to a better identification of the conditions under which the relationship between explicit knowledge about reading and reading performance could be expected. First, the measure of Reading Performance should be modified in such a way as to be much closer to the usual requirements of the study tasks imposed to adult students. The test of Reading Performance used in the present study included more questions of recall than questions of comprehension. However, nearly

all of the strategies mentioned by subjects were much more appropriate for getting the gist of the text than for insuring rote recall of specific facts. If the criterial task were more concerned with identifying the essential organizing features and crucial elements of the text, the relationship between knowledge and performance could become more evident. Second, subjects should be given more time to read and study the text. Examination of the types of strategies reported by subjects reveals that many adult readers know and intend to use strategies which imply a thorough processing of the informations (e.g. to evaluate the text for internal consistency or to summarize main aspects). Because these strategies are also quite time-consuming, it is conceivable that our subjects simply did not have enough time to apply the strategies they would have considered most appropriate to meet their own criteria of full understanding considering that only 20 minutes were allowed for studying the text. Third, samples of subjects should include not only relatively proficient adult readers, but also adult disabled as expert readers. A larger range of expertise would make it possible to more precisely identify which content and organization of strategic repertoire distinguishes effective from less effective readers.

It is a fact that the study of the role of metacognitive awareness about strategies in reading performance raises great difficulties; we believe, however, that this is a crucial issue that deserves increased attention. The more we will be able to specify what type of knowledge about reading good readers bring to bear in different reading situations, the more we will be able

to design instructional procedures to help poor or novice readers to acquire an explicit and detailed understanding of effective strategies for reading.

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TABLE 1

Mean score and standard deviation on the Initial Comprehension Test and the Reading Performance Test for the activation and control groups.

MEASURE	Activation group		Control group	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.
Initial Comprehension (max. score = 24)	15.30	4.10	15.76	3.77
Reading Performance				
Global (max. score = 22)	13.53	3.20	12.90	3.26
Recall (max. score = 12)	8.07	2.10	8.10	1.90
Comprehension (max. score = 10)	5.46	1.50	4.80	1.90

TABLE 2

Total frequency and mean emission rate of strategies mentioned in each category by subjects (n =30) in the activation condition and number of subjects reporting each category of strategies.

	Category	Total frequency[1]	Mean emission rate	Standard deviation	Number of subjects reporting the strategy
	COVERT STUDYING ACTION				
1.	To identify main aspects	32	1.07	1.23	18
2.	To summarize	33	1.10	1.30	15
3.	To interconnect informations	53	1.77	1.76	21
4.	To identify logical structure	26	0.87	1.41	11
5.	To use prior knowledge	14	0.47	0.86	8
6.	To evaluate the text for internal consistency or external validity	44	1.47	2.40	15
7.	To engage in self-questionning	44	1.47	1.70	18
8.	To evaluate one's own understanding	24	0.80	1.35	12
9.	To evaluate one's own recall	18	0.60	0.86	12
	OVERT STUDYING ACTION				
10.	To reread	115	3.83	2.29	29
11.	To adapt reading rate	47	1.57	1.63	17
12.	To underline	14	0.47	0.73	10
13.	To take notes	6	0.20	0.48	5
	TARGET OBJECT				
14.	Underlinings	6	0.20	0.66	3
15.	Notes	6	0.20	0.93	2
16.	Main aspects	62	2.07	1.80	24
17.	Logical structure	13	0.43	0.90	8
18.	Difficult to understand parts	10	0.33	0.66	7

1. Each category of strategies could be mentioned more than once by each subject.

TABLE 3

Multiple Regression for predictors of global scores on the Reading Performance Test

Variable	Multiple R	R^2	R^2 increment	overall F	P
Initial Comprehension Test	.43	.19	.19	6.39	.017
Cat. 13: To take notes	.57	.33	.14	6.64	.005
Cat. 12: To underline	.68	.46	.13	7.38	.001
Cat. 7: To engage in self-questioning	.74	.54	.09	7.47	.001
Cat. 2: To summarize	.77	.59	.04	6.79	.001
Cat. 15: Notes	.79	.62	.03	6.18	.001
Cat. 14: Underlinings	.81	.65	.03	5.85	.001
Cat. 8: To evaluate one's own understanding	.83	.69	.04	5.95	.001
Cat. 10: To reread	.85	.72	.02	5.67	.001
Cat. 11: To adapt reading rate	.86	.74	.02	5.36	.001
Cat. 4: To identify logical structure	.87	.76	.03	5.32	.001